

REMARKS

Claim 1 stands rejected under 35 USC 103(a) as being unpatentable over Nakagi in view of Chang and further in view of Kim. Claim 3 stands rejected under 35 USC 103(a) as being unpatentable over Nakagi in view of Chang. These rejections are respectfully traversed.

Claim 3 has been amended to specify that “the color filter has the aperture formed in each of the reflective regions” as previously recited in claim 4. Claims 1 and 3 now claim transfective liquid crystal displays that include 1) a color filter having a transmissive region and a reflective region which are provided in each picture element of the color filter and which have colored layers comprising a single material, 2) a three-peak type LED backlight source being used as the backlight source, 3) and an aperture that is formed in the reflective region.

It has been found that using all three of these elements together provides unexpected benefits over using any one or any two of these elements. Specifically, as detailed below, it has been found that the brightness and the color reproducibility of the reflective region of the transfective display is improved by using the three-peak type LED, which is used as the backlight source for the transmissive display. Further, this effect is unexpectedly further improved when a color filter with aperture is also used. None of the cited references disclose these benefits and, accordingly, it would not be obvious to combine all three of these elements together as claimed.

On a reflective display, only the environmental light is used for the display (see enclosed reference drawing 1, which corresponds to Fig. 9 in the application). Accordingly, the backlight (in this case a three-peak type LED) is not used on this portion of display. In spite of this, the brightness and the color reproducibility of the reflective region are improved when a three-peak type LED is used as claimed. This because the color reproducibility of the transmissive display is improved when we use the three-peak type LED in place of a common light source (e.g. cold cathode fluorescent lamp or two-peak type LED). Because the color reproducibility of the transmissive display is improved by the three-peak type LED, the thickness of the pixels can be

reduced without decreasing the color reproducibility of the transmissive display below that obtained by a typical transmissive display. In the claimed transflective liquid crystal displays the transmissive region and reflective region are formed simultaneously (that is they have same thickness). Accordingly, when the transmissive region is made thinner, the reflective region is also made thinner. Decreasing the thickness of the reflective region increases the brightness of this region. This is because the distance the environmental light passing through the reflective region travels is decreased.

The color reproducibility of the reflective region is also unexpectedly improved when a color filter with aperture is used. Specifically, when the brightness of the reflective region is standardized to 36.9 by controlling the aperture region ratios, the color reproducibility of the reflective region increases from 15% for comparative example 1 to 23% for example 1 (see table 2). This occurs in spite of the fact that example 1 utilizes a thin display.

Further, when the color reproducibility of the reflective region is standardized to 15% by controlling the aperture region ratios, the brightness of the reflective region increases from 36.9 for comparative example 1 to 41.3 for example 2 (see and in table 2). This occurs in spite of the fact that less aperture was used for example 2.

With respect to claim 3, the brightness of the reflective regions of Example 7 (three-peak type LED light source) is 28% higher than that in Comparative Example 10 (two-peak type LED light source) when the color reproducibility of the reflective region is standardized to 22% (see Table 8).

Accordingly, the use of the three-peak type LED as the backlight source for the transmissive display portion unexpectedly improves the color characteristics (color reproducibility and brightness) of the reflective portion of the display. Further, this effect is unexpectedly further improved when a color filter with aperture is also used.

The Examiner alleges that the claims are unpatentable over Nakagi, in view of Chang and further in view of Kim. Specifically, the Examiner alleges that Nakagi discloses the claimed transfective display, Chang discloses the claimed three-peak type LED backlight source, and Kim discloses the claimed color filter with aperture. None of these references, however, teaches or suggests using all three of these elements together as claimed.

Without applicants' disclosure, which discloses the benefits of using all three of these elements together, it would not be obvious to combine all three of these elements together in a single display as claimed. The Examiner is reminded that when combining references, Examiners must cast their minds back to the time the invention was made "to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art." *Id.* One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to depreciate the claimed invention." *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988). In combining these three references together, the Examiner has selectively chosen from the huge number of references dealing with liquid crystal displays to arrive at the claimed invention. Since the references do not describe or suggest the benefits of using all three of the above described elements together as claimed, absent applicants' disclosure, it would not be obvious to one skilled in the art to pick and choose these three specific references and combine them as claimed.

Accordingly, the rejection of claims 1 and 3 should be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **360842011300**.

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Respectfully submitted,

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